INDEX

SOVIET MINING SCIENCE

Volume 12, Numbers 1-6, 1976

SOVIET MINING SCIENCE
Volume 12, Numbers 1-6, 1976
(A translation of Fiziko-Tekhnicheskie Problemy Razrabotki Poleznykh Iskopaemykh)

A

Abashin, P. A. - 72
Adushkin, V. V. - 381
Afanas'ev, B. F. - 219
Aitmatov, I. T. - 238
Aksenov, V. K. - 17, 144, 319
Amusin, B. Z. - 359
Anikanov, V. M. - 403
Annin, B. D. - 673
Antipov, E. V. - 471
Artemov, A. V. - 399

B

Babakov, V. A. - 507
Baev, Kh. A. - 651
Baikenzhin, A. E. - 118
Baikonurov, O. A. - 25, 148
Bakhtin, G. A. - 208
Bardanyan, G. S. - 553
Barkovskii, V. M. - 421
Beisetaev, R. B. - 244
Belyatskii, V. P. - 167, 283
Bergman, É. I. - 5
Beron, A. I. - 377
Bezmaternykh, V. A. - 184
Beknazarov, T. S. - 238
Bineev, É. A. - 399
Blagodarenko, Yu. L. - 585
Blinova, T. G. - 108
Blok, A. V. - 114
Blokh, N. P. - 211
Bobrov, G. F. - 448
Bobrovskii, S. V. - 174, 273
Bobryakov, A. P. - 518
Bochkarev, G. R. - 328, 408
Bogatyrev, V. D. - 201
Bogatyreva, A. S. - 201, 654
Bondarenko, N. V. - 644
Bonetskii, V. A. - 201, 654
Borisov, Yu. E. - 319
Borodin, V. P. - 377
Borzenhov, L. A. - 122
Brenner, V. A. - 601
Bruiko, Yu. P. - 235
Bublik, F. P. - 85
Butorin, Yu. M. - 62

C

Chernyavskii, Yu. E. - 292
Chikin, V. G. - 342
Chirkov, S. E. - 10
Chupin, G. D. - 344

D

Dmokhovskii, A. V. - 553
Dokukin, A. V. - 111
Dolgov, K. A. - 454
Drukovanyi, M. F. - 292
Dudushkina, K. I. - 444
Dymna, A. I. - 235
Dyrdin, V. V. - 29, 336
Dzhangozin, M. M. - 432

E

Egoshin, V. V. - 654
Ermekov, T. M. - 25
Ermilov, N. P. - 604
Erzhanov, Zh. S. - 5
Eselev, I. M. - 104
Evseev, I. I. - 651
Evstratenkov, G. S. - 636

F

Faddeenkov, N. N. - 510
Fadeev, P. Ya. - 604
Fadeev, V. Ya. - 604
Faustov, G. T. - 72
Fedorenko, V. K. - 17, 144
Fedorin, V. A. - 229
Fedorov, A. V. - 640
Fedosova, V. Ya. - 328
Fedulov, A. I. - 601
Fes'kov, M. I. - 204, 339
Fotieva, N. N. - 265

G

Galkin, A. F. - 364
Gasoyan, M. S. - 221
Gavrilenko, V. A. - 62
Glukhodedov, V. N. - 399
Glukhov, B. P. - 439
Glushikhin, F. P. - 435
Glushko, V. T. - 471
Gogolev, V. M. - 174, 273
Gorbachev, A. I. - 640
Grigorashchenko, V. A. - 367
Gritsko, G. I. - 66, 134, 351
Gromov, Yu. V. - 85
Gru, G. L. - 417
Gubkin, V. I. - 122
Gulyaikhin, E. V. - 324
Gurkov, K. S. - 215, 559

I

Ibraev, Zh. A. - 118
Im, V. A. - 301
Ionin, A. A. - 167, 283
Ivanov, V. V. - 29, 336
Ivanov-Shits, N. K. - 474

K

Kabakov, A. M. - 208
Karatygin, E. P. - 104
Karpov, S. K. - 55
Karyagina, N. V. - 98
Katanov, B. A. - 314
Katashinskii, V. P. - 573
Kaufman, L. L. - 532
Khamidulin, F. F. - 601
Khanukaev, A. N. - 167, 283
Khapilova, N. S. - 479
Khcheyan, G. Kh. - 671
Khesin, G. L. - 553, 580
Klempner, K. S. - 92
Klimashko, V. V. - 608
Knoll, P. - 421
Kolkov, O. S. - 576
Kolosov, A. V. - 439
Korostovenko, V. V. - 163
Kostina, L. M. - 413
Kostylev, A. D. - 215, 559
Kovalev, V. I. - 612
Kovalev, Yu. Z. - 55
Kovylin, Yu. Ya. - 39
Kozachenko, L. S. - 576
Kozyrev, A. A. - 421
Kramarev, O. B. - 92
Kravtsov, V. S. - 292
Krivoborodov, I. P. - 526
Kucheryabyi, F. I. - 588
Kulagin, R. A. - 604
Kulakov, G. I. - 367
Kulishenko, I. I. - 612
Kurdyukov, A. N. - 339
Kurinnoi, V. P. - 588
Kurlenya, M. V. - 140, 421
Kurmangaliev, M. M. - 25
Kurtagin, A. D. - 601
Kusov, N. F. - 111
Kutaeva, G. S. - 580
Kuzin, G. S. - 319
Kuz'min, V. S. - 580

Kuznetsov, S. T. - 359
Kuznetsov, V. M. - 280, 673
Kuznetsova, S. N. - 111
Kvasnikov, V. F. - 79

L

Labutin, V. N. - 601
Lazutkin, A. G. - 44, 601
Leiman, Ya. A. - 301
Leont'ev, A. - 347
Leshchukov, N. N. - 184
Lin'kov, A. M. - 493
Lozhkina, V. P. - 174, 273
Lyuboshchinskii, D. M. - 301

M

Maidukov, G. L. - 98
Malkis, N. I. - 34
Mal'tsev, V. M. - 184
Malyarchuk, A. M. - 427
Mamaev, V. I. - 118
Marchenko, L. N. - 501
Markov, G. F. - 314
Martsinkevich, G. I. - 111
Martynov, Yu. I. - 224
Mel'nikov, N. V. - 501
Mezentsev, K. T. - 526
Mirenkova, G. A. - 451
Miroshnikov, S. I. - 532
Mirzaev, I. M. - 296
Mitin, L. A. - 604
Mosinets, V. N. - 163
Mozzhukhina, L. V. - 211
Muchnik, S. V. - 189
Musatov, L. G. - 553
Myasnikov, A. A. - 636

N

Naumova, S. F. - 413
Nikiforovskii, V. S. - 244, 673
Nikulin, V. V. - 49
Nizkoshapka, V. P. - 471

Onopchuk, B. N. - 198, 395, 484
Ordin, A. A. - 229, 537
Osodoev, M. T. - 232

O

Panin, M. I. - 221
Parakhonskii, É. V. - 665
Pavlov, V. N. - 631
Pavlov, Yu. S. - 601
Pekarskii, D. G. - 359
Pernik, L. M. - 381
Petrovskaya, E. A. - 403
Petukhov, I. M. - 493
Pikalov, A. I. - 72
Piskunov, V. I. - 487
Podoprigora, Yu. A. - 59
Pokrovskii, G. N. - 518
Popov, S. N. - 140
Posokhov, G. E. - 129, 444
Potapov, N. P. 215, 344, 559
Prishchepa, E. A. - 588
Prokof'ev, A. S. - 301
Proshin, Yu. M. - 526
Pushkarev, V. I. - 219

P

Rabota, É. N. - 493
Rasskazov, V. V. - 174, 273
Reva, N. P. - 292
Revuzhenko, A. F. - 249
Reznikov, B. S. - 563
Rodionov, V. N. - 541
Rozental', A. K. - 178
Rozhkov, L. G. - 344
Rubal'skii, I. M. - 301
Rukhailo, N. V. - 573
Ryashentseva, E. S. - 328
Rykov, K. E. - 108
Ryskunov, A. A. - 167, 283
Ryzhkov, V. V. - 79

S

Sadokhin, V. P. - 201
Safokhin, M. S. - 342
Sakharov, V. N. - 580
Sal'nikov, V. N. - 461
Semun'kin, M. D. - 122
Sen'ko, L. S. - 319
Sentsov, P. I. - 333
Seregin, Yu. N. - 5
Serpeninov, B. N. - 518
Severin, L. P. - 665
Sevost'yanov, V. V. - 129
Shamber, É. A. - 118
Shashchanov, B. O. - 118
Shelenok, V. V. - 292
Shemyakin, E. I. - 249
Shevkun, E. V. - 125
Shik, V. M. - 457
Shkonda, V. V. - 59
Shtein, M. Sh. - 17, 144
Shumskii, I. P. - 159, 444
Shvetsov, V. T. - 615
Shvidkii, N. I. - 659
Sidorov, V. S. - 493
Simanovich, G. A. - 487
Simonov, B. F. - 55
Skipochka, S. I. - 471
Smirnov, A. G. - 585
Smirnov, B. V. - 235
Smolin, N. I. - 514
Smolyanitskii, B. N. - 608
Solodenko, A. B. - 324
Sologub, S. Ya. - 612
Somov, G. I. - 640
Sosnina, É. G. - 451
Spivak, A. A. - 541
Sryvtseva, B. P. - 328
Stafeev, P. F. - 631
Starchevskii, A. S. - 580
Stazhevskii, S. B. - 249
Stepanenko, M. V. - 170
Strekachinskii, G. A. - 229, 537
Sudnishnikov, B. V. - 227
Sukhodrev, V. M. - 178
Sychkov, V. V. - 408

T

Taran, É. P. 507
Tarasov, B. G. - 29, 336
Taratorin, B. I. - 580
Terent'ev, V. I. - 122
Tereshkin, A. F. - 129
Tkach, Kh. B. - 608
Tkachev, V. A. - 569
Tomashevskii, L. P. - 319
Tonkonogov, M. P. - 432, 545
Trofimov, I. M. - 526
Trumbachev, V. F. - 34, 569
Tsvetkov, V. M. - 541
Tulebaev, K. K. - 148
Tupitsyn, K. K. - 227, 309
Turchaninov, S. P. - 620
Tyurin, V. P. - 636
Tyutneva, G. K. - 221

U

Ushakov, G. S. - 364
Ushakov, L. S. - 601

V

Vasil'chenko, V. F. - 612
Vasil'ev, A. G. - 92
Vasil'ev, L. M. - 597
Vasyuchkov, Yu. F. - 403
Vatolin, E. S. - 377
Veksler, V. A. - 432, 545
Veksler, Ya. A. - 44
Veprintsev, V. I. - 152
Vereda, V. S. - 195
Vershinin, A. A. - 627
Vinogradov, G. A. - 573
Vlasenko, B. V. - 134, 351
Voitsekhovskaya, F. F. - 391, 592
Voitsekhovskii, B. V. - 391
Volkov, A. E. - 85
Vorob'ev, A. A. - 461
Vorob'eva, T. A. - 432
Vovk, A. A. - 585
Vylegzhanin, V. N. - 66

Y

Yalovenko, N. A. - 59
Yamshchikov, V. S. - 114, 152
Yanov, A. P. - 659

Yanovskii, B. G. - 286, 384
Yarunov, A. M. - 615

Z

Zablotskaya, N. P. - 108
Zamyshlyaev, B. V. - 174, 273
Zborshchik, M. P. - 427
Zel'vyanskii, A. Sh. - 532
Zhadin, V. V. - 159
Zharikov, I. F. - 501
Zhavoronok, I. V. - 580
Zhovtukha, G. A. - 659
Zil'bert, I. S. - 301
Zlotnikov, M. S. - 435
Zubkov, A. V. - 211
Zver'kov, S. N. - 292
Zysmanov, L. G. - 49

SOVIET MINING SCIENCE
Volume 12, Numbers 1-6, 1976
(A translation of Fiziko-Tekhnicheskie Problemy Razrabotki Poleznykh Iskopaemykh)

Volume 12, Number 1 January-February, 1976

	Engl.	Russ.
Siberian Mining Science: Twenty-Fifth Session of the Communist Party of the USSR	1	3
ROCK MECHANICS AND ROCK PRESSURE		
Characterization of the Rheological Properties of Salt Rocks — Zh. S. Erzhanov, É. I. Bergman, and Yu. N. Seregin	5	7
The Strength of Rocks under Triaxial Compression with Unequal Components — S. E. Chirkov	10	11
Determination of the Mechanical Characteristics and Stresses in a Rock Mass — V. K. Aksenov, M. Sh. Shtein, and V. K. Fedorenko	17	18
Use of the Ultrasonic Method to Investigate Distribution of the Elastic Parameters of Rocks in Interchamber Pillars — O. A. Baikonurov, T. M. Ermekov, and M. M. Kurmangaliev	25	25
Monitoring the Mechanical State of the Rocks by Means of Changes of the Vertical Component of the Magnetic Field — B. G. Tarasov, V. V. Dyrdin, and V. V. Ivanov	29	29
Optically Sensitive Materials for the Photoplasticity and Photocreep Methods — N. I. Malkis and V. F. Trumbachev	34	35
MECHANIZATION AND AUTOMATION IN MINING		
Refinement of Design Calculations for Inclined Suspension Rods in Vibrotransporters with Helical Troughs — Yu. Ya. Kovylin	39	41
Calculating the Load on the Blade of a Dynamic Plane — A. G. Lazutkin and Ya. A. Veksler	44	46
Physical Characterization of the Process of Coal Cutting by a Bit with Additional Applied Vibrations — L. G. Zysmanov and V. V. Nikulin	49	50
Regulators with Optimum Response Time for Electromagnetic Percussive Machines — B. F. Simonov, Yu. Z. Kovalev, and S. K. Karpov	55	57
Centering a Conveyer Belt by Rotating the Side Support Rollers in Plan — Yu. A. Podoprigora, V. V. Shkonda, and N. A. Yalovenko	59	61
Some Aspects of the Reliability of Drilling Equipment — Yu. M. Butorin and V. A. Gavrilenko	62	64
UNDERGROUND MINING		
Optimization of Mining Procedure in Gassy Burst-Prone Seams — G. I. Gritsko and V. N. Vylegzhanin	66	69
Effect of the Abutment Pressure of Pillars on the Stability of the Intermediate Strata — P. A. Abashin, G. T. Faustov, and A. I. Pikalov	72	75
Use of a Column-Supported Artificial Roof for Rock Pressure Control in Working Thick Steep Coal Seams by Inclined Slices — V. F. Kvasnikov and V. V. Ryzhkov	79	81
How the Deformation of Development Workings Depends on the Rate of Advance of the Mining-Out Face — F. P. Bublik, A. E. Volkov, and Yu. V. Gromov	85	87
PHYSICAL AND CHEMICAL PRINCIPLES OF BENEFICIATION		
Calculation of the Errors in Monitoring the Ash Content of a Flow of Coal — A. G. Vasil'ev, K. S. Klempner, and O. B. Kramarev	92	95

	Engl.	Russ.
Filtration Properties of the Flotation Products of Donetsk Coals — G. L. Maidukov and N. V. Karyagina	98	100
Physical Models of Underground Salt Leaching — I. M. Eselev and E. P. Karatygin	104	106
Regulation of Micelle Formation and the Flotation Properties of Fatty Acids by Addition of Foamers — K. E. Rykov, N. P. Zablotskaya, and T. G. Blinova	108	110
BRIEF COMMUNICATIONS		
The Piezoelectric Properties of Coals — A. V. Dokukin, N. F. Kusov, G. I. Martsinkevich, and S. N. Kuznetsova	111	114
Information Parameters and Estimates of the Reliability of Geomonitoring of the State of the Rocks — V. S. Yamshchikov and A. V. Blok	114	116
The Effect of the Stress—Strain State of the Rock on the Size of the Zone of Fissure Formation in Torpedo Drilling of a Poorly Caving Roof — V. I. Mamaev, Zh. A. Ibraev, B. O. Shashchanov, É. A. Shamber, and A. E. Baikenzhin	118	120
Method and Site for Measuring Fragment Size of Blasted Rock, and Criterion for Assessing It, in the LGOK Quarry — V. I. Terent'ev, V. I. Gubkin, M. B. Semun'kin, and L. A. Borzenkov	122	123
The Influence of Mineral Composition on the Properties of the Rocks — E. V. Shevkun	125	125

Volume 12, Number 2 March-April, 1976

ROCK MECHANICS AND ROCK PRESSURE		
Roof Displacement in Working Thick Steeply Dipping Seams in the Kuzbass to the Rise with Stowing of the Worked-Out Area — G. E. Posokhov, A. F. Tereshkin, and V. V. Sevost'yanov	129	3
A Method for Calculating the Displacement Surfaces of the Wallrocks during Working of a Coal Seam — G. I. Gritsko and B. V. Vlasenko	134	9
Prediction of the State of Stress of Rock Masses in the Prospecting and Construction Stages of a Mining Enterprise — S. N. Popov and M. V. Kurlenya	140	16
Deformation of Coal Masses — V. K. Aksenov, V. K. Fedorenko, and M. Sh. Shtein	144	21
Variation in the Elastic Properties of a Rock Mass with Depth — O. A. Baikonurov and K. K. Tulebaev	148	26
Investigating the Properties and Jointing of Rock with the Aid of Noise Signals from Machinery — V. S. Yamshchikov and V. I. Veprintsev	152	32
The Mechanical Quality Factor of Rocks as a Measure of Fissuring — V. V. Zhadin and I. P. Shumskii	159	40
ROCK BREAKING		
Formation of Stress and Fracture Zones when Solid Rock is Blasted Using Charges of Various Types — V. N. Mosinets and V. V. Korostovenko	163	44
Dynamic Tensile Strength in Blasting of Prestressed Rock — A. N. Khanukaev, V. P. Belyatskii, A. A. Ionin, and A. A. Ryskunov	167	49
A Method of Analyzing Transient Impulsive Deformations in Elastic Structures — M. V. Stepanenko	170	53
Interpolation Equation of State for Shale and Its Use for Investigating the Scabbing Rate for Strong Shock Waves — S. V. Bobrovskii, V. M. Gogolev, B. V. Zamyshlyaev, V. P. Lozhkina, and V. V. Rasskazov	174	58
Convective Heat Exchange between Crushed Ore and a Heat Carrier during Ore Leaching — A. K. Rozental' and V. M. Sukhodrev	178	62
Distribution Function of Fragment Dimensions in Blasted Rock — V. A. Bezmaternykh, N. N. Leshchukov, and V. M. Mal'tsev	184	69

Engl./Russ.

MINE AERODYNAMICS
Role of Chemisorption in the Mechanism of Gas Bursts — S. V. Muchnik 189 75
Geological Criteria for the Gasdynamic Hazard in Coalfields — V. S. Vereda 195 82
Mechanism of Rock Fracture in Gas Bursts — B. N. Onopchuk 198 86
Assessment of the Air Permeability of the Rock between Openings during Mining of Contiguous Seams — V. A. Bonetskii, V. D. Bogatyrev, A. S. Bogatyreva, and V. P. Sadokhin 201 91
Dust Suppression by Spraying in Mine Workings — M. I. Fes'kov 204 94

NEW METHODS AND DEVICES
A Basis for Classification of Rocks by Their Strength Properties — G. A. Bakhtin and A. M. Kabakov 208 98
Feasibility of Using the Urethane Elastomer SKU-10 for Optical-Polarization Modeling of Problems in Elasticity — A. V. Zubkov, N. P. Blokh, and L. V. Mozzhukhina .. 211 102
Choosing a Method of Monitoring the Energy Parameters of Pneumatic Punches — A. D. Kostylev, N. P. Potapov, and K. S. Gurkov 215 107

BRIEF COMMUNICATIONS
A Simplified Method of Determining the Long-Term Strengths of Rocks — B. F. Afanas'ev and V. I. Pushkarev 219 111
Coefficients of Reflection of Rocks for Optical Radiation — M. S. Gasoyan, M. I. Panin, and G. K. Tyutneva 221 113
Forecasting the Strength of Fissured Rocks of Dzhezkazgan — Yu. I. Martynov 224 117
A Type of Labyrinth Packing — B. V. Sudnishnikov and K. K. Tupitsyn 227 120
Choosing a Route for a Main Transport Line in a Coalfield — G. A. Strekachinskii, A. A. Ordin, and V. A. Fedorin 229 123
Economics of Antidust Measures in Drilling Operations — M. T. Osodoev 232 126

Volume 12, Number 3 May-June 1976

ROCK MECHANICS AND ROCK PRESSURE
Representativeness of Physical and Mechanical Characteristics of Rocks Surrounding Coal Seams, and Methods of Estimating Them — B. V. Smirnov, Yu. P. Bruiko, and A. I. Dymna 235 3
A Method of Calculating the Optimum Support Parameters for Development Workings — I. T. Aitmatov and T. S. Beknazarov 238 7
Strengths of Solids under Uniaxial Compression — R. B. Beisetaev and V. S. Nikiforovskii 244 15
New Methods of Calculating Load on Supports — A. F. Revuzhenko, S. B. Stazhevskii, and E. I. Shemyakin 249 21
Stressed State of Noncircular Tunnel Linings in Rock Subjected to Tectonic Effects — N. N. Fotieva 265 40

ROCK BREAKING
Effect of Thermal Decomposition of the Scabbing Velocity Due to Strong Shock Waves in Solid Media — S. V. Bobrovskii, V. M. Gogolev, B. V. Zamyshlyaev, V. P. Lozhkina, and V. V. Rasskazov 273 49
Preservation of Diamond Crystals during Blasting of Kimberlite — V. M. Kuznetsov 280 57
Tensile Strength of Rocks Subjected to Explosive Loading — A. N. Khanukaev, V. P. Belyatskii, A. A. Ionin, and A. A. Ryskunov 283 60
Influence of Specific Explosives Consumption on Rock Throw in Cutting Horizontal Workings — B. G. Yanovskii 286 64

Calculation of Fracture Zones Created by Exploding Cylindrical Charges in Ledge Rocks – M. F. Drukovanyi, V. S. Kravtsov, Yu. E. Chernyavskii, V. V. Shelenok, N. P. Reva, and S. N. Zver'kov 292 70
Reactions of Composite Structures, with Concentrated and Distributed Parameters, to Seismic Action (Vertical Vibrations) – I. M. Mirzaev 296 75

MECHANIZATION AND AUTOMATION OF MINING OPERATIONS
How the Productivity of a Cutter–Loader Is Affected by the Quality of Load Regulation on the Motors – I. S. Zil'bert, V. A. Im, Ya. A. Leiman, D. M. Lyuboshchinskii, A. S. Prokof'ev, and I. M. Rubal'skii 301 82
Modeling the Operation of a Pneumatic Borer – K. K. Tupitsyn 309 91
Influence of Cutter Arrangement on Drill Bit Efficiency – B. A. Katanov and G. F. Markov 314 98

UNDERGROUND MINING
Stress–Strain State of Solid Coal during Shield Extraction of Thick Inclined Seams – L. P. Tomashevskii, V. K. Aksenov, L. S. Sen'ko, G. S. Kuzin, and Yu. E. Borisov 319 104

PHYSICAL AND CHEMICAL PRINCIPLES OF BENEFICIATION
Concentration of Tin Ores by a Magnetohydrodynamic Method – E. V. Gulyaikhin and A. B. Solodenko 324 110
Feasibility of Using Electrochemical Coagulation to Purify Mine Water – G. R. Bochkarev, V. Ya. Fedosova, B. P. Sryvtseva, and E. S. Ryashentseva 328 116

BRIEF COMMUNICATIONS
Influence of Cracks on State of Stress of the Rock around a Mine Working – P. I. Sentsov 333 122
Assessment of the Stressed State of Marginal Zones of Coal Seams by Electrometry – B. G. Tarasov, V. V. Dyrdin, and V. V. Ivanov 336 126
Wetting of Coal Dust by Gas Saturated with Water Vapor – M. I. Fes'kov and A. N. Kurdyukov 339 129
Efficiency of Impact Energy Transfer through a Drill Coupling – M. S. Safokhin and V. G. Chikin 342 133
Some Aspects of Adjustment of Comparators for Pneumatic Borers – N. P. Potapov, G. D. Chupin, and L. G. Rozhkov 344 135

CURRENT EVENTS
Fifth All-Union Seminar on the Measurement of Stresses in Solid Rock – Reviewed by A. Leont'ev 347 139

Volume 12, Number 4 July-August, 1976

ROCK MECHANICS AND ROCK PRESSURE
A Method of Calculating the Displacement Surfaces of the Side Rocks during Working of a Coal Seam – G. L. Gritsko and B. V. Vlasenko 351 3
Approximate Calculation of the Risk of Bed Separation in Coal Seam Roofs – S. T. Kuznetsov, B. Z. Amusin, and D. G. Pekarskii 359 12
Calculation of the Stable Room Span When the Rock Mass is Subjected to Additional Freezing – G. S. Ushakov and A. F. Galkin 364 18
The Stress–Strain State of Protective Linings Formed in Boreholes – V. A. Grigorashchenko and G. L. Kulakov 367 21
Physical Prerequisites for Monitoring Rock Strength by the Acoustic Method – A. I. Beron, E. S. Vatolin, and V. P. Borodin 377 32

ROCK FRACTURE
Large-Scale Blasting-Down in Opening-Up the Tyrnyauz Deposit – V. V. Adushkin and L. M. Pernik 381 36
Methods of Reducing Ejection of Rock from the Face in Driving Horizontal Workings – B. G. Yanovskii 384 40
Fracture of Rocks by an Impact Load – F. F. Voitsekhovskaya and B. V. Voitsekhovskii 391 48

MINE AERODYNAMICS
Some Characteristics of Gas Bursts – B. N. Onopchuk 395 52
Physicochemical Methods of Treating an Anthracite Seam for Degassing Purposes – A. V. Artemov, É. A. Bineev, and V. N. Glukhodedov 399 56
Gas Emission of Coal during Hydraulic Mining – Yu. F. Vasyuchkov, E. A. Petrovskaya, and V. M. Anikanov 403 61

PHYSICAL AND CHEMICAL PRINCIPLES OF BENEFICIATION
Use of Water in Flotation of Transbaikal Fluorite Ores – V. V. Sychkov and G. R. Bochkarev 408 66
Electrochemical Potential of Magnetite during Flotation – S. F. Naumova and L. M. Kostina 413 72
Theory of Inertial Screens with Three-Dimensional Vibrations of the Box – G. L. Gru 417 77

NEW METHODS AND DEVICES
Comparative Tests on Sets of Equipment for the Load Relief Method with Measurements of Borehole Wall Deformation – V. M. Barkovskii, P. Knoll, A. A. Kozyrev, and M. V. Kurlenya 421 82
An Electromagnetic Method of Determining the Dimensions of the Zone of Inelastic Deformation around a Mine Working – M. P. Zborshchik and A. M. Malyarchuk 427 89
Electrical Properties of the Country Rocks of the Karaganda Coalfield. Electrical Conductivity and Dielectric Relaxation – M. P. Tonkonogov, V. A. Veksler, M. M. Dzhangozin, and T. A. Vorob'eva 432 94
Some Aspects of the Technology of Making Models from Equivalent Materials for Investigations of Rock Pressure Phenomena – M. S. Zlotnikov and F. P. Glushikhin 435 98
Principles of Intensification of Leaching Underground Cavities – A. V. Kolosov and B. P. Glukhov 439 102

BRIEF COMMUNICATIONS
Standard Structures of the Country Rocks Around the Coal in Existing and Deep Horizons of the Prokop'evsk-Kiselevsk Coalfield of the Kuzbass – G. E. Posokhov, K. I. Dudushkina, and I. P. Shumskii 444 108
Rheological State of the Adjacent Strata to the Coal in the Prokop'evsk Coalfield of the Kuzbass – G. F. Bobrov 448 112
Stresses on the Surface of a Working in Elastic Rock – É. G. Sosnina and G. A. Mirenkova 451 115
The Influence of Jointing on the Efficiency of Rock Crushing by Blasting – K. A. Dolgov 454 118
Causes of Failure in Hydraulic Props of Mechanized Supports – V. M. Shik 457 120

Volume 12, Number 5 September- October, 1976

ROCK MECHANICS AND ROCK PRESSURE
Radio Emission and Anomalous Changes in Electrical Conductivity in Heated Rock and Mineral Specimens – A. A. Vorob'ev and V. N. Sal'nikov 461 3
The Applicability of Radio-Wave Methods to Bauxite Deposits – V. T. Glushko, S. I. Skipochka, V. P. Nizkoshapka, and E. V. Antipov 471 15
Seismoacoustic Signals Detected in Pits in the Donets Coalfield – N. K. Ivanov-Shits 474 19

Engl./Russ.

Sudden Extrusion of an Inhomogeneous Coal Seam: Basic Relations – N. S. Khapilova. 479 24
Engineering Calculation of Gas Burst Parameters – B. N. Onopchuk 484 30
The State of Stress of the Side Rocks in the Slot Method of Protecting a Working – V. I. Piskunov and G. A. Simanovich 487 34
Determination of the Stresses in the Floor of a Mining-Out Working and in the Surrounding Rocks – I. M. Petukhov, É. N. Rabota, A. M. Lin'kov, and V. S. Sidorov. 493 40

ROCK BREAKING
The Effect of an Air Cavity on the Motion of the Ground during Ejection Blasting – N. V. Mel'nikov, L. N. Marchenko, and I. F. Zharikov. 501 49
Calculation of the Stress Field Induced by Firing Elongated Charges – V. A. Babakov and É. P. Taran 507 55
Calculation of the Grain-Size Composition in Crushing of Jointed Rock by Blasting – N. N. Faddeenkov. 510 59
Experimental Determination of the Energy Flux Density in a Weak Air Shock Wave due to an Explosion – N. I. Smolin 514 63
The Influence of Crack Propagation Velocity on the Energy Content of the Fracture Process – A. P. Bobryakov, G. N. Pokrovskii, and B. N. Serpeninov 518 67

UNDERGROUND MINING
Extraction Operations in the "Oktyabr'" Mine – I. M. Trofimov, K. T. Mezentsev, I. P. Krivoborodov, and Yu. M. Proshin 526 76
A Method of Sequential Optimization of the Distribution of Reliability Indices among the Components of the Transport Network of a Mine – A. Sh. Zel'vyanskii, L. L. Kaufman, and S. I. Miroshnikov 532 83
Computer Optimization of Steiner–Weber Networks by the Gradient Method – G. A. Strekachinskii and A. A. Ordin 537 88

NEW METHODS AND DEVICES
A Method of Determining the Filtration Properties of Rock in Place – V. N. Rodionov, A. A. Spivak, and V. M. Tsvetkov. 541 92
The Electrical Properties of the Country Rocks of the Karaganda Coalfield – M. P. Tonkonogov and V. A. Veksler 545 96
Use of the Photoelasticity Method to Investigate the States of Stress in Models of Underground Structures – G. L. Khesin, G. S. Bardanyan, A. V. Dmokhovskii, and L. G. Musatov. 553 105
A Test Rig for Monitoring the Energy Characteristics of Pneumatic Punches – A. D. Kostylev, N. P. Potapov, and K. S. Gurkov 559 111

Volume 12, Number 6 November-December, 1976

ROCK MECHANICS AND ROCK PRESSURE
Optimal Planning of Linings of Axisymmetric Cavities with Respect to Initial "Failure" – B. S. Reznikov 563 3
Variation of Stress Distribution in the Roofs of Development Workings as a Function of Geological and Engineering Factors – V. A. Tkachev and V. F. Trumbachev 569 10
The Deformation Mechanism of Loose Material – V. P. Katashinskii, G. A. Vinogradov, and N. V. Rukhailo 573 15
Shear and Bulk Deformation in Sandy Soil – L. S. Kozachenko and O. S. Kolkov 576 18

ROCK BREAKING
Some Aspects of Modeling Rock Fracture by the Optical Polarization Method – G. L. Khesin, B. I. Taratorin, V. N. Sakharov, I. V. Zhavoronok, V. S. Kuz'min, G. S. Kutaeva, and A. S. Starchevskii 580 23

Engl./Russ.

Two Components of the Stress Field near an Exploding Charge – A. A. Vovk, A. G. Smirnov, and Yu. L. Blagodarenko 585 28
Gasdynamic Processes during Explosion of a Charge in a Borehole with a Terminal Air Gap – F. I. Kucheryabyi, V. P. Kurinnoi, and E. A. Prishchepa 588 32
Wave Processes near the Face of a Borehole during Percussive Drilling – F. F. Voitsekhovskaya 592 36
The Shear of an Individual Element of Slice during Rock Cutting – L. M. Vasil'ev 597 41

MECHANIZATION AND AUTOMATION IN MINING
Results of Bench Tests on the USD-Z Dynamic Plow – A. G. Lazutkin, L. S. Ushakov, F. F. Khamidulin, V. A. Brenner, Yu. S. Pavlov, A. D. Kurtagin, A. I. Fedulov, and V. N. Labutin 601 47
Characteristics of a Cutter-Loader with a Percussive Effector Unit – L. A. Mitin, P. Ya. Fadeev, V. Ya. Fadeev, R. A. Kulagin, and N. P. Ermilov 604 51
Striker Travel in a Pneumatic Machine during Filling and Discharge of the Working Chamber – V. V. Klimashko, B. N. Smolyanitskii, and Kh. B. Tkach 608 54
The Optimum Bit Geometry for Rotary Drilling of Boreholes in Hard Rocks – I. I. Kulishenko, V. I. Kovalev, V. F. Vasil'chenko, and S. Ya. Sologub 612 59
Use of an Analog Computer to Model the Motions of the Parts of a Rotary-Percussive Electromechanical Drill with Cam-Driven Striker – V. T. Shvetsov and A. M. Yarunov 615 63
Modeling Hydroabrasive Wear in a Toroidal Tube – S. P. Turchaninov 620 68

OPEN-CUT MINING
Comparative Assessment of Schemes for Artificial Ventilation of Quarries – A. A. Vershinin 627 76
The Optimum Duration of the Dredging Season – P. F. Stafeev and V. N. Pavlov 631 80

MINE AERODYNAMICS
Analysis of Ventilation Problems and Means for Solving Them by Network Calculations Involving Computing Techniques – A. A. Myasnikov, G. S. Evstratenkov, and V. P. Tyurin 636 86
Exact Solution to the Problem of Inflow of Gas into a Borehole under Conditions of Quasilinear Isothermal Nonequilibrial Filtration – A. V. Fedorov, A. I. Gorbachev, and G. I. Somov 640 91
Determining the Amount of Gas Emitted in a Working during Plane Degassing of Coal Seams – N. V. Bondarenko 644 95
Calculating the Economic Effectiveness of Degassing Coal Mines – Kh. A. Baev and I. I. Evseev 651 103
A Mathematical Model of Low-Temperature Oxidation of a Coal Heap – V. A. Bonetskii, A. S. Bogatyreva, and V. V. Egoshin 654 106
Efficiency of Inertial Trapping of Dust by Water Drops – A. P. Yanov, G. A. Zhovtukha, and N. I. Shvidkii 659 112
High-Efficiency Ventilator Plants for Artificial Ventilation of Deep Open-Cut Mines – É. V. Parakhonskii and L. P. Severin 665 117

CHRONICLES
Second All-Union Conference on Geotechnological Methods of Mineral Extraction – Reviewed by G. Kh. Khcheyan 671 125

BOOK REVIEWS
G. P. Cherepanov. The Mechanics of Brittle Fracture – Reviewed by B. D. Annin, V. M. Kuznetsov, and V. S. Nikiforovskii 673 127

INDEX
Author Index, Volume 12, Numbers 1-6, 1976 677
Tables of Contents, Volume 12, Numbers 1-6, 1976 681